

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-21. (Canceled)

22. (Currently amended) A digital contents distribution server providing digital contents to a second network, the server comprising:

a connection to a first network, said first network being configured for holding and transmitting the digital contents to a plurality of clients in the second network, wherein said clients in the second network are grouped into client groups that are mutually connected to the second network through lines different in communication capacity; and

a central processor unit configured for dividing the digital contents into a plurality of packets;

wherein the packets are defined as a minimum unit required for reconstructing the digital contents;

a storage device storing an updatable list of client destinations located in the second network, wherein said updatable list comprises;

client group identifiers for identifying which clients belong to which client group representing a wide area network;

and

a client list of the clients constructing the wide area network group within the second network, each client receiving the packets referring to source packet distribution data or a list of pre-allocated copy destinations, which is received together with said packets;

wherein the server adds and removes the client destinations from the updatable list responsive to said client destinations joining or leaving their respective client group;

the central processor unit further configured for transmitting the packets to the first

network wherein copies of said packets are then transmitted, through the second network to a selected client group;

the central processor unit further configured for dynamically allocating, by use of the updatable list, ~~the a~~ selected client group in the second network to which the packets are transmitted;

a receiver configured for receiving receipt notices from the listed destinations;

the central processor unit further configured for dynamically selecting ~~at least~~ one client destination, from the updatable list of client destinations, wherein the selected client destination serves ~~serving~~ as an intermediate node for the selected client group, by use of the receipt notices; and

the central processor unit further configured for transmitting the packets to the intermediate node, wherein the packets mean the minimum packets capable of reconstructing original digital contents without the overlap of the packets;

wherein the central processor unit further transmits to the intermediate node information comprising source packet distribution data and a list of the clients within the client group to which the intermediate node belongs; and

wherein the intermediate node refers to the transmitted information for distributing copies of the packets to other clients in the selected client group for reconstructing the digital contents from the packet copies.

23. (Previously presented) The server of claim 22, wherein the central processor unit is further configured for:

registering, with the server, a time when the server transmits the packets to a predetermined destination;

registering, with the server, a time when a client having the predetermined destination issues the receipt notice of the packets; and

calculating a time difference between the transmission time and the receipt notice issuance time.

24. (Previously presented) The server according to claim 22, wherein the central processor unit is further configured for dynamically updating the updatable list of client destinations in association with a change of a construction of the second network.

25. (Currently amended) A client computer configured for receiving in a second network digital contents distributed through a first network ~~in a~~ wherein the second network connected to the first network, the client comprising:

a receiving buffer that writes a received packet to an address corresponding to a packet identifier of the received packet for each time of receiving the packet and the buffer configured for:

receiving, through the first network, dynamically allocated packets of a minimum unit for constructing digital contents divided into a plurality of packets, wherein the packets of the minimum unit comprise a minimum number of packets capable of reconstructing original digital contents without an overlap of the packets;

wherein the packets for reconstructing the digital contents are received by a dynamically selected intermediate node within a client group in the second network;

wherein the clients in the second network are grouped into client groups representing wide area networks that are mutually connected to the second network through lines different in communication capacity;

wherein the client groups are stored in an updatable list comprising:

client group identifiers for identifying which clients belong to which client group;
and

a client list of the clients constructing the wide area network group within the second network, each client receiving the packets referring to source packet distribution data or a list of pre-allocated copy destinations, which is received together with said packets;
and

a central processor unit configured for distributing to other clients within the client group

in the second network copies of the packets of the minimum unit received through the first network and packets received from other clients through the second network.

26. (Previously presented) The client according to claim 25, wherein the central processor unit is further configured for preparing a receipt notice which comprises a time of receiving the packets of the minimum unit.

27. (Previously presented) The client according to claim 25, wherein the central processor unit is further configured for identifying the packets of the minimum unit from the packets received from the other clients.

28. (Currently amended) The client according to claim 25, ~~further comprising:~~
~~an updatable list of members constructing the second network; and~~
wherein the central processor unit is further configured for updating the updatable list in any of cases where a client is added to and deleted from the second network.

29. (Currently amended) A digital contents distribution system configured for distributing digital contents, the system comprising:

a server connected to ~~the~~ a first network and configured for holding therein and transmitting the digital contents;

~~a wide area group comprising:~~

a first network and

a second network comprising a plurality of client groups connected to the first network through lines different in communication capacity, wherein each client group represents a wide area network; and

the plurality of client groups constructed by including clients constructing the second network connected to the first network and for constructing the wide area group for receiving and providing the digital contents wherein one of the clients in the second network is

dynamically selected as an intermediate node for receiving a packet from the server and transmitting the received packet to other clients in the client group, and

wherein the server is configured for dividing the held digital contents into a plurality of packets and transmitting packets of a minimum unit for constructing the digital contents to the intermediate node by dynamically allocating the packets without overlap, and

wherein the intermediate node distributes copies of the packets of the minimum unit received from the server to all of the clients constructing the client group to which the intermediate node belongs, using an updatable list comprising:

client group identifiers for identifying which clients belong to which client group;
and

a client list of the clients constructing the wide area network group within the second network, each client receiving the packets referring to source packet distribution data or a list of pre-allocated copy destinations, which is received together with said packets;
and

wherein the packets of the minimum unit mean the minimum number of packets capable of reconstructing original digital contents without the overlap of the packets.

30. (Currently amended) A server connected to a first network for distributing digital contents, the server comprising:

an interface configured to ~~acquire~~ receive the digital contents;

a storage device for ~~holding~~ storing therein the digital contents;

wherein the storage device also stores an updatable list of client destinations located in a second network, wherein said updatable list comprises:

client group identifiers for identifying which clients belong to which client group,
wherein each client group represents a wide area network; and

a client list of the clients constructing the wide area network group within the second network, each client receiving packets referring to source packet distribution data or a list of pre-allocated copy destinations, which is received together with said packets;

wherein the server adds and removes the client destinations from the updatable list responsive to said client destinations joining or leaving their respective client group;

a central processor unit configured for:

reading the digital contents from the storage device;

creating packets of a minimum unit by dividing the digital contents into a plurality of packets, wherein the packets of the minimum unit comprise the minimum number of packets capable of reconstructing original digital contents without an overlap of the packets;

selecting distribution destinations of the packets of the minimum unit in such a manner that identical packets of the minimum unit are not overlapped for a predetermined group, wherein the distribution destinations are selected from the updatable list of destinations included in the second network; and

transmitting the packets to a first network for transmitting to an intermediate node within the predetermined group for dynamically allocating the packets of the minimum unit for constructing the digital contents;

wherein the intermediate node distributes copies of the packets to clients of the selected destinations in the group.

31. (Previously presented) The server according to claim 30, wherein the central processor unit is configured for creating packets of a minimum unit including data for distributing a copy of the packets of the minimum unit at least to another group.

32. (Currently amended) A method for controlling a computer as a server for distributing digital contents, through a first network, to a wide area group including a plurality of groups in a second network, the method making the computer execute the steps of:

storing the digital contents in a storage device;

creating packets of a minimum unit by dividing the held digital contents into a plurality of packets, wherein the packets of the minimum unit comprise the minimum number of packets

capable of reconstructing original digital contents without an overlap of the packets;

selecting and registering therewith distribution destinations of the packets of the minimum unit in such a manner that identical packets of the minimum unit are not overlapped for a predetermined group, wherein the distribution destinations are selected from an updatable list of destinations;

wherein said updatable list comprises;

client group identifiers for identifying which clients belong to which client group;

and

a client list of the clients constructing a wide area network group within the second network, each client receiving the packets referring to source packet distribution data or a list of pre-allocated copy destinations, which is received together with said packets;

wherein the server adds and removes the client destinations from the updatable list responsive to said client destinations joining or leaving their respective client group;

storing data of the selected distribution destinations as the packets of the minimum unit;

and

reading and transmitting, for constructing the digital contents, the stored packets of the minimum unit to an intermediate node within the selected distribution destination for distributing copies of the packets to other clients of the selected distribution destinations in the group while dynamically allocating the read-out packets;

wherein the group is connected to the server through a second network connected to the first network through lines different in communication capacity.

33. (Canceled)

34. (Currently amended) A computer readable recording medium recording therein a program for controlling a computer as a server for holding therein and distributing digital contents, through a first network, to a wide area group including a plurality of groups connected through a second network,

wherein the program when executed causes the computer execute the steps of:
creating packets of a minimum unit by dividing the held digital contents into a plurality of packets;

selecting and registering therewith distribution destinations of the packets of the minimum unit in such a manner that identical packets of the minimum unit are not overlapped for a predetermined group, wherein the distribution destinations are selected from an updatable list of destinations ~~comprising: and represents clients within client groups;~~

client group identifiers for identifying which clients belong to which client group, wherein each client group represents a wide area network;

a client list of the clients constructing the wide area network group within the second network, each client receiving the packets referring to source packet distribution data or a list of pre-allocated copy destinations, which is received together with said packets;

storing data of the selected distribution destinations as the packets of the minimum unit;
and

reading and transmitting, for constructing the digital contents, the stored packets of the minimum unit to an intermediate node for distributing copies of the packets to the other clients of the selected distribution destinations in the group while dynamically allocating the read-out packets;

wherein the group is connected to the server through a second network connected to the first network through lines different in communication capacity.

35- 41. (Canceled)